

An Introductory Algebra Problem

The ACME rental company rents inline skates for a base fee of \$5.00, plus \$3.00 an hour.

- What would be the cost to rent inline skates for 2 hours? \$11.00 4.5 hours? \$18.50
9 hours? \$32.00
- Make a chart of your answers from question #1.

Time (Hours)	2	4.5	9
Cost (\$)	\$11.00	\$18.50	\$32.00

- On the graph paper provided, construct a scatterplot showing the relationship between the number of hours that you rent the skates (horizontal axis) vs. the cost for renting the skates (vertical axis). *(have students examine data to determine size of graph and steps)*
- Connect the points on your scatterplot to show the "continuous" relationship between the time and the cost. *(line of best fit)*
- Use your graph to approximate the number of hours you would rent the inline skates if the cost was \$27.50. 7.5 hrs.

The SLEEK rental company competes with ACME by renting inline skates for \$8.00, plus \$2.50 per hour.

- Describe SLEEK's strategy in competing with ACME. inline skate renters
who rent for more hours
- What would be the cost to rent inline skates from SLEEK for 2 hours? \$13.00
4.5 hours? \$19.25 9 hours? \$30.50
- Again, make a chart of your answers from the question above.

Time (Hours)	2	4.5	9
Cost (\$)	\$13.00	\$19.25	\$30.50

9. Add these data points to your preceding graph to show the relationship between the number of hours that you rent skates vs. the cost for renting the skates with SLEEK's plan. Again, connect the points.

10. From your graph, determine when the cost would be the same whether you rent from ACME or SLEEK and explain how you came to this conclusion. 10 hrs \$23.00

where both best fit lines intersect

11. When is it cheaper to rent from SLEEK, rather than renting from ACME? _____

After 6 hours

12. For each rental company, write an equation that shows the relationship between the number of hours H one rents the skates vs. the cost C for renting the skates.

ACME: $C = 3H + 5$ SLEEK: $C = 2.5H + 8$

13. Can you use your equations (not the graph) to determine when the cost would be the same whether you rent from ACME or SLEEK?

$$3H + 5 = 2.5H + 8$$

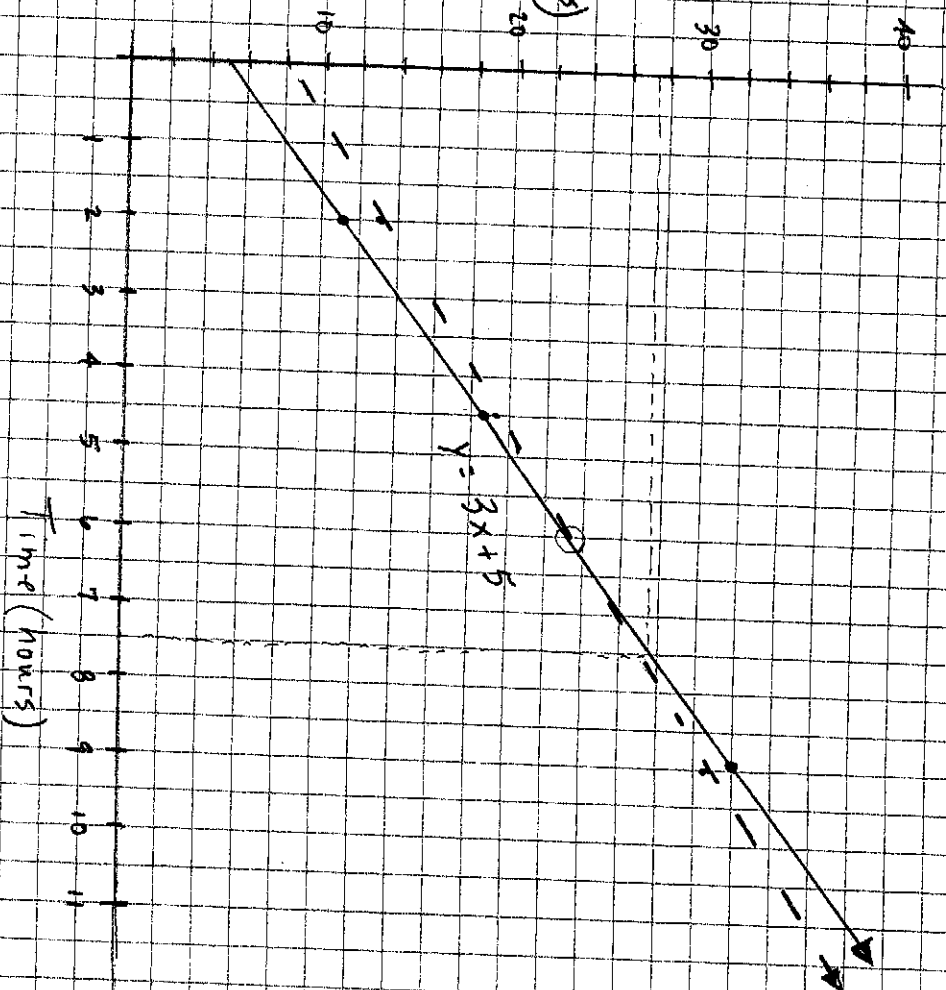
$$.5H + 5 = 8$$

$$.5H = 3$$

$$H = 6 \text{ hrs}$$

$$3(6) + 5 = \$23.00$$

INLINE SKATE RENTAL



12.

$$y = 3x + 5$$

$$y = 2.5x + 8$$

13.

$$3x + 5 = 2.5x + 8$$

$$-2.5x \quad -2.5x$$

$$.5x + 5 = 8$$

$$-5 \quad -5$$

$$y = 3(6) + 5$$

$$y = 18 + 5$$

$$y = 23$$

* Can use (H)

F0 + (X)

$$\frac{.5x = 3}{.5 \quad .5}$$

$$x = (6, 23)$$